

REMARKS

Applicants thank the Examiner for the very thorough consideration given the present application.

Claims 4-11 are now present in this application. Claim 4 is independent.

Amendments have been made to the Abstract of the Disclosure and specification, claims 1-3 have been canceled, and claims 4, 5, 9, 10 and 11 have been amended. Reconsideration of this application, as amended, is respectfully requested.

Drawings

Applicants have not received a Notice of Draftsperson's Patent Drawing Review PTO-948 or other indication of whether or not the formal drawings have been approved by the Draftsperson. Since no objection has been received, Applicants assume that the drawings are acceptable and that no further action is necessary. Confirmation thereof in the next Office Action is respectfully requested.

Restriction Requirement

The Examiner has made the Restriction Requirement final, and has withdrawn claims 1-3 from further consideration. By this Amendment,

Applicants have canceled non-elected claims 1-3. Applicants reserve the right to file a divisional application directed to claims 1-3 at a later date if so desired.

Substitute Specification

In accordance with MPEP §608.01(q), Applicants herewith submit a substitute specification in the above-identified application. Also included is a marked-up copy of the original specification, which shows the portions of the original specification which are being added and deleted. Applicants respectfully submit that the substitute specification includes no new matter and that the substitute specification includes the same changes as are indicated in the marked-up copy of the original specification showing additions and deletions.

Because the number of amendments which are being made to the original specification would render it difficult to consider the case, or to arrange the papers for printing or copying, Applicants have voluntarily submitted this substitute specification. Accordingly, Applicants respectfully request that the substitute specification be entered into the application.

Rejection Under 35 U.S.C. § 102

Claims 4, 6, 8, 10 and 11 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Yates. This rejection is respectfully traversed.

A complete discussion of the Examiner's rejection is set forth in the Office Action, and is not being repeated here.

While not conceding the appropriateness of the Examiner's rejection, but merely to advance prosecution of the instant application, Applicants respectfully submit that independent claim 4 has been amended to recite a combination of elements in a method of etching and cleaning objects contained in a vessel, including the steps of etching the objects by providing etching solution into the vessel; and forcing out the etching solution alone from the vessel by providing pressurized gas into the vessel. Applicants respectfully submit that this combination of elements as set forth in independent claim 4 is not disclosed or made obvious by the prior art of record, including Yates.

The Examiner states that Yates discloses a method comprising etching the objects by providing etching solution into the vessel (Col.9, lines 26-27) and exiting the etching solution from the vessel by providing pressurized gas into the vessel (Col.9, lines 18-32). At the outset, the Applicants respectfully submit that the sequence of steps in Applicants' claimed method is not taught by Yates, including the portion of Yates referenced by the Examiner.

Yates discloses three embodiments directed to minimization of water spotting and oxide growth that are experienced on semiconductor structures during chemical treatment steps. In each embodiment of Yates, a liquid (water)

rinse is performed in the vessel immediately following the etching step.

In the first embodiment of Yates, etching is carried out in a first vessel, and the water rinse/wash is carried out in a second vessel. In this embodiment, a step of forcing out the etching solution from the vessel is not disclosed (at all), and therefore the feature of forcing out the etching solution alone, of the Applicants' claimed invention is not met at the outset.

In the second embodiment of Yates, a step of forcing out of the etching solution is not disclosed (a dry etch is used), but it is disclosed that following gas etching, the semiconductor structure is washed with DI water (Yates, Col.3, lines 16-18). It is possible that some draining occurs here. However, since water is used in this step, any remnants of the etching medium would be washed from the vessel with the rinse water rather than being forced out of the vessel with a pressurized gas. DI water is not a pressurized gas. Further, since DI water and etching solution are drained from the vessel together, the Applicants' claimed feature of forcing out the etching solution alone is not met by Yates. All other steps of Yates in which an etching solution is drained or forced out, also include the feature water and etching solution being removed from the vessel together.

In the third embodiment of Yates, like the first and second embodiments, water is introduced into the vessel before removing the etching solution, and the water and etching solution are eventually drained together. (Yates, Col. 3, lines

42-45).

These three embodiments of Yates are in sharp contrast with the Applicants' claimed invention, which sets forth that the presence of water and etching solution in the vessel at the same time is problematic.

Therefore Yates fails to teach a combination of elements in a method of etching and cleaning objects contained in a vessel, including the steps of etching the objects by providing etching solution into the vessel; and forcing out the etching solution alone from the vessel by providing pressurized gas into the vessel, as recited in independent claim 4, as amended. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

With regard to dependent claims 6, 8, 10 and 11, Applicants submit that claims 6, 8, 10 and 11 depend, either directly or indirectly, from independent claim 4, which is allowable for the reasons set forth above, and therefore claims 6, 8, 10 and 11, are allowable based on their dependence from claim 4. Reconsideration and allowance thereof are respectfully requested.

Rejections under 35 U.S.C. § 103

Claims 4-11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Yates. This rejection is respectfully traversed.

A complete discussion of the Examiner's rejection is set forth in the Office

Action, and is not being repeated here.

Yates, argued above with respect to independent claim 4, fails to teach or suggest, *inter alia*, a combination of elements in a method of etching and cleaning objects contained in a vessel, including the steps of etching the objects by providing etching solution into the vessel; and forcing out the etching solution alone from the vessel by providing pressurized gas into the vessel, as recited in independent claim 4, as amended.

Claims 5-11 depend, either directly or indirectly on independent claim 4. Since Yates fail to teach or suggest the above-recited features of independent claim 4, Yates cannot render claims 4-11 obvious to one of ordinary skill in the art. Reconsideration and withdrawal of this art grounds of rejection is respectfully requested.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

Application No.: 09/727,516
Art Unit 1765

Attorney Docket No. 3430-0149P
Amendment filed May 12, 2004

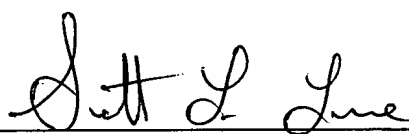
If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Percy L. Square, Registration No. 51,084, at (703) 205-8034, in the Washington, D.C. area.

Prompt and favorable consideration of this Amendment is respectfully requested.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By:  #41,458

James T. Eller, Jr.
Reg. No.: 39,538


JTE:PLS:jls

P.O. Box 747
Falls Church, Virginia 22040-0747
Telephone: (703)205-8000

Attachment: Abstract of the Disclosure
Substitute Specification (with marked-up copy)